

What is claimed is:

1. A method for detecting occult blood in a specimen comprising:
 - (a) treating the specimen with a reacting solution comprising a strong reducing agent, wherein the strong reducing agent reduces porphyrin to a porphyrin-like product; and
 - (b) monitoring for the fluorescence of the porphyrin-like product in the treated specimen, wherein fluorescence of the porphyrin-like product indicates the presence of occult blood.
2. A method of claim 1, wherein the strong reducing agent is sodium borohydride.
3. A method of claim 2, wherein the reacting solution is made up of approximately 0.1 percent to approximately 4 percent sodium borohydride.
4. A method of claim 2, wherein the reacting solution is made up of approximately 0.2 percent sodium borohydride.
5. A method of claim 1, wherein the reacting solution is comprised primarily of phosphate buffered saline (PBS).
6. A method claim 1, wherein the specimen is a biological specimen selected from the group consisting of feces, urine, cerebral spinal fluid, plural cavity fluid, thoracic cavity fluid, or cerebral fluid.
7. A method claim 1, wherein the fluorescence of the porphyrin-like product is monitored by a fluorescent spectrometer or a fluorescent microscope.
8. A method claim 1, wherein the porphyrin-like product fluoresces with a spectrum from about 530 to about 670 nm when excited at about 480 nm.

9. A method for detecting one or more erythrocytes in a specimen, wherein the method comprises:
- (a) treating the specimen with a strong reducing agent effective to enhance the fluorescence of any erythrocyte present in the specimen; and
 - (b) monitoring the fluorescence emitted by the treated specimen,
- wherein fluorescence of one or more erythrocytes in the treated specimen indicates the presence of erythrocytes.
10. A method of claim 9, wherein the specimen is a biological specimen selected from the group consisting of feces, urine, cerebral spinal fluid, plural cavity fluid, thoracic cavity fluid, or cerebral fluid.
11. A method of claim 9, wherein the erythrocytes are monitored by a fluorescent microscope.
12. A method for quantifying the amount of occult blood in a specimen comprising:
- (a) exposing the specimen to a reacting solution comprising a strong reducing agent, wherein the strong reducing agent reduces porphyrin to a porphyrin-like product; and
 - (b) monitoring for the fluorescence of a porphyrin-like product in the treated specimen, wherein fluorescence of the porphyrin-like product indicates the amount of occult blood present in the specimen.
13. A method of claim 1 comprising detecting fecal occult blood in a fecal specimen by:
- (a) purifying the fecal specimen to substantially remove all materials that will interfere with measuring the fluorescence properties of the fecal specimen;
 - (b) treating the purified fecal specimen with a reacting solution comprising a strong reducing agent, wherein the strong reducing agent reduces porphyrin to a porphyrin-like product; and
 - (c) monitoring for the fluorescence of a porphyrin-like product in the treated specimen, wherein fluorescence of the porphyrin-like product indicates the presence of occult blood in the fecal specimen.

14. A test kit comprising a reacting solution comprising a strong reducing agent, wherein the reacting solution is used to treat a specimen and the strong reducing agent reduces porphyrin to a porphyrin-like product, and wherein monitoring the fluorescence of the porphyrin-like product in the treated specimen is indicative of the presence of occult blood in the specimen.
15. A kit of claim 14, wherein the strong reducing agent is sodium borohydride.
16. A kit of claim 15, wherein the reacting solution is made up of approximately 0.1 percent to approximately 4 percent sodium borohydride.
17. A kit of claim 15, wherein the reacting solution is made up of approximately 0.2 percent sodium borohydride.
18. A kit of claim 15, wherein the reacting solution is comprised primarily of phosphate buffered saline (PBS).
19. A kit of claim 15, wherein the specimen is a biological specimen selected from the group consisting of a biological specimen selected from the group consisting of feces, urine, cerebral spinal fluid, plural cavity fluid, thoracic cavity fluid, or cerebral fluid.
20. A kit of claim 14, wherein the fluorescence of the porphyrin-like product is monitored by a fluorescent spectrometer or a fluorescent microscope.
21. A kit of claim 14, wherein the porphyrin-like product fluoresces with a spectrum from about 530 to about 670 nm when excited at about 480 nm.
22. A kit of claim 14, wherein the kit comprises (1) directions for gathering biological samples and specimens such as feces, urine, cerebral spinal fluid, fluid from the plural cavity, cerebral fluid, and other body fluids or excretions; and (2) protocols for analyzing whether those samples and specimens contain occult blood, and if so, the amount of occult blood present in each positive sample.
23. A kit of claim 14, wherein the kit is designed to detect fecal occult blood and includes reagents and containers necessary for collecting and purifying a fecal specimen.

24. A kit of claim 14, wherein the kit comprises distinct containers for individual reagents and containers for collecting and/or storing biological samples and specimens.
25. A kit of claim 24, wherein each reagent is aliquoted in an individual container.
26. A method comprising determining whether a subject is at risk of developing, or suffers from, a disease associated with occult blood by:
 - (a) treating a specimen obtained from the subject with a reacting solution comprising a strong reducing agent, wherein the strong reducing agent reduces porphyrin to a porphyrin-like product; and
 - (b) monitoring for the fluorescence of the porphyrin-like product in the treated specimen, wherein fluorescence of the porphyrin-like product indicates the presence of occult blood and the likelihood that the subject may develop or has developed the disease.
27. A method of claim 26, wherein the disease is gastrointestinal tumors, kidney tumors, bladder tumors, lung cancer, thoracic wall cancer, or parasite infestation and the subject is a human.
28. A method of claim 26, wherein the specimen is a biological specimen selected from the group consisting of feces, urine, cerebral spinal fluid, plural cavity fluid, thoracic cavity fluid, and cerebral fluid.
29. A method comprising determining the extent and spatial distribution of erythrocytes trapped in cerebral tissue microvasculature by:
 - (a) treating cerebral tissue microvasculature with a reacting solution comprising a strong reducing agent, wherein the strong reducing agent reduces porphyrin to a porphyrin-like product; and
 - (b) monitoring for the fluorescence of a porphyrin-like product in the treated tissue; wherein fluorescence of the porphyrin-like product indicates the extent and spatial distribution of erythrocytes trapped in cerebral tissue microvasculature.
30. A method of claim 30, wherein the vasculature is flushed with heparinized saline by cardiac perfusion to remove erythrocytes from functional post-ischemic brain microcirculation prior to treatment with the reacting solution.

31. A test kit comprising a reacting solution comprising a strong reducing agent, wherein the reacting solution is used to treat cerebral tissue microvasculature and the strong reducing agent reduces porphyrin to a porphyrin-like product, and wherein monitoring the fluorescence of the porphyrin-like product in the cerebral tissue microvasculature is indicative of the extent and spatial distribution of erythrocytes trapped in cerebral tissue microvasculature.
32. A method comprising determining whether a subject is at risk of developing, or suffers from, cerebral vascular trauma or bleeding by:
- (a) treating cerebral tissue microvasculature *in situ* or *ex vivo* with a reacting solution comprising a strong reducing agent, wherein the strong reducing agent reduces porphyrin to a porphyrin-like product; and
 - (b) monitoring for the fluorescence of a porphyrin-like product in the treated tissue; wherein fluorescence of the porphyrin-like product indicates the extent and spatial distribution of erythrocytes trapped in cerebral tissue microvasculature.
33. A method of detecting the presence or past existence of erythrocytes in a specimen or sample comprising:
- (a) treating the specimen or sample with a reacting solution comprising a strong reducing agent, wherein the strong reducing agent reduces porphyrin to a porphyrin-like product; and
 - (b) monitoring for the fluorescence of the porphyrin-like product in the treated specimen or sample, wherein fluorescence of the porphyrin-like product indicates the presence of erythrocytes.
34. A test kit comprising a reacting solution comprising a strong reducing agent, wherein the reacting solution is used to treat a known or suspected blood sample and the strong reducing agent reduces porphyrin to a porphyrin-like product, and wherein monitoring the fluorescence of the porphyrin-like product in the sample is indicative of the presence of erythrocytes in the sample.